

November 30, 2001

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W. TW-A325
Washington, DC 20554

Re: *Ex Parte* Notification and Summary, Revision of Part 15 of the Commission's Rules
Regarding Ultra-Wideband Transmission Systems, ET Docket No. 98-153

Dear Ms. Salas:

On November 28, 2001, Brian Valania and Joe Valania of Florian Wireless Inc. and the undersigned met with Monica Shah Desai, Interim Legal Advisor for Wireless and International Issues to Commissioner Martin. Brian Valania described his background as an engineer and a volunteer firefighter, and the firefighter tracking applications developed by Florian Wireless Inc. We explained that these applications would not be possible at power levels below the FCC's proposed rule for Ultra-Wideband transmission systems.

Florian Wireless Inc. is a technology company located in Pennsylvania that is bringing new wireless technology to bear, to improve firefighting capabilities and to better protect firefighters. The company name is derived from St. Florian, the patron saint of firefighters.

Company founder, Brian Valania, developed the technology combining his experience as a firefighter with the Painted Post Fire Company in Painted Post, NY with his technical background working at Corning Incorporated as a Senior Infrastructure Technologist. Through a multidisciplinary approach that relies heavily on the real life experience of firefighters themselves, the company spearheaded a re-examination of existing firefighter technology and an exploration of how new technologies can increase the effectiveness of firefighters as well as better ensure their safety in a variety of different situations. They found that UWB's precise tracking and positioning features, combined with its data transmission capabilities, support a dramatic advance in firefighting technology. This led to Florian's focus on UWB as a technology to support their firefighting applications.

Mr. Valania pointed out that firefighter applications require outdoor use of UWB by public safety personnel in order to support tactical command of the fire, which is managed outside the building. In addition, prohibiting UWB use below 6 GHz, as some commenters have suggested, would eliminate the ability to provide through-wall tracking and positioning. Mr. Valania described the typical command structure for a fire, including the importance of

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information being available to the tactical commander who is located outside the building or structure. This would not be possible if UWB use is limited to indoor only. The tactical command center usually is located within 50 to 100 feet outside the building, usually on a truck or rescue vehicle. Senior firefighters with the most experience direct the attack on the fire, but a serious challenge is to provide them with real time information about what is happening inside the building where the more junior, interior attack firefighters are located. The ability for tactical command to have precise knowledge of each firefighter's location in three dimensions, including which floor they are on, is a tremendous advantage in both planning the attack on the fire and in ensuring the safety of firefighters in the building.

For example, in a recent fire in Houston on October 15, 2001, Mr. Valania described how unusual wind conditions blew most of the heat to one side of the building, leading a firefighter to mistakenly enter a portion of the building where the fire was centered. This firefighter might not have perished if his tactical commander was able to track where he was in the building and warn him that he was in the wrong area.

In a recent fire in Bath, New York that he was directly involved in, Mr. Valania described a situation where, without knowledge of the location of firefighters inside the building, the main hoses were aimed directly at them, knocking one firefighter to the ground. Tracking technology would enable tactical command to avoid these kinds of accidents. Finally, tracking technology in three dimensions and to a half an inch accuracy will support safe evacuation, for example, enabling a commander with access to the floor plan to inform a firefighter where he is in the building and to direct him through dense smoke to the nearest exit. Not knowing where a firefighter is located in the building in order to send support or to guide him out has been a major challenge in firefighting and has resulted in deaths that might have been averted. Again, it is our experience that these capabilities are not possible if UWB use is only allowed above 6 GHz.

While other tracking technologies can provide some of these functions, they are not able to locate firefighters on different levels of the building or to within half an inch accuracy which enables commanders to know not only what room a person is in, but which wall he is near. In addition, UWB technology enables transmission of other important information such as remaining air time, heart rate and other vital statistics that support a safe and effective fire attack.

We also discussed the ways that Florian plans to integrate their technology into existing technologies already in use by firefighting companies. First, they integrate the UWB unit into the SCBA (self-contained breathing apparatus) and the PASS (Personal problem alarm) systems. In addition, they plan to integrate existing GPS technologies already in use by

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firefighting companies to provide location information for buildings, with UWB equipment for tracking and position information inside the building.

Mr. Valania also described the ways that UWB can be used in search and rescue operations. In these scenarios, the ability of rescue personnel to coordinate an effective rescue can sometimes be hampered by night or low-light conditions or perhaps even large geographic search areas. With UWB technology, rescuers can leave behind very low power emitters that will show on a grid what areas have already been searched. This will eliminate duplication of effort and allow a more coordinated rescue effort; this is very important as many rescues are conducted to locate small children that have wandered into wooded, dense areas.

Pursuant to Section 1.1206 of the Commission's Rules, 47 C.F.R. §1.1206, an original and a copy of this letter have been submitted for inclusion in the public record. Please contact me at the phone number listed above if you have any questions concerning this letter.

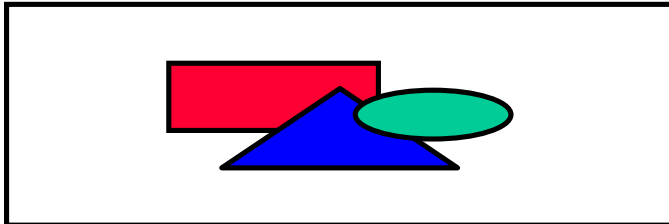
Sincerely,

Kristan Van Hook
President
Mindbeam, LLC

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FIRST CALL

Firefighter Communications and Tracking System

First Call Firefighter Communications and Tracking System is designed to provide critical real-time information to the tactical firefighting commander and to improve the safety of individual firefighters. This information is obtained using ultrawideband (UWB) technology, which provides information on the location and status of firefighters on the scene. The technology is also used to give firefighters more information as they enter a structure on its layout and on the location of their fellow firefighters. This logistical information is largely lacking in traditional firefighting. First Call applies technology to support a more safe and knowledgeable fire attack.

Tactical Control

First Call features a Centralized Command Center/Accountability System that displays a range of critical, real-time information on a passive matrix LCD panel that is water resistant and mobile. This unit features backlighting for night or low-light conditions as well as a software-based interface that allows a tactical commander to access the information that the individual devices have captured. This will enable the tactical commander to quickly see and respond to events.

The First Call system will also be capable of downloading the floor plan of the building or structure. This will be used in conjunction with GPS positioning to locate and download the building layout, and support more precise fire attack planning en route to the scene.

In addition, First Call devices will enable the commanding officer to capture data for later analysis and reporting, and facilitate compliance with state reporting requirements.

Firefighter Protection

At the firefighter level, First Call will provide individual firefighter position information as well as vital statistics including “bottle” time (remaining time on the SCBA – self contained breathing apparatus) and temperature (which can help in the determination of hazardous conditions) as well as providing two-way communication from the firefighter and the tactical commander. In future units we also plan to provide a notification trigger if a firefighter has gone into cardiac arrest, as well as data on the oxygen levels in the room. First Call units’ design is integrated with current PASS (personal problem alert) technology and contained in the SCBA frame.

A Platform for Future Improvements to Fire Safety

The implementation of this technology will bring about a radically new way of thinking about fire management. Future design improvements we envision include the ability to provide information to the firefighter in a redesigned helmet that may be able to provide the same functionality as the command module. Information would be delivered through the use of heads-up display technology and a redesigned helmet with improved communications capability and visibility. These kinds of advancements would allow a firefighter to see a floor plan of the area which would aid in preliminary search and rescue for offensive fire attack, as well as faster escape for defensive operations.

Capabilities

The First Call Firefighter Communications and Tracking System would allow the wearer to send monitored information to a centralized console that would be maintained by a command position.

On the scene of an emergency, a firefighter’s position would be monitored as he entered the building to look for civilians and to plan the initial fire attack. Today, this is a dangerous process where the firefighter searching for survivors can become lost in the smoke and disoriented as to his own and other firefighters’ positions.

Today the options for a firefighter in this situation include initiating the PASS devices that are mounted to the SCBA (Self contained breathing apparatus) and waiting for other firefighters to hear the alarm, thus saving needed oxygen for escape, or to try to reorient oneself in an unfamiliar structure and try to escape. These options often do not provide the kind of detailed information, particularly location information within a structure, that can lead to successful rescue. A recent tragic example of this situation was the Worcester, MA fire that killed six firefighters. Four of those firefighters were killed trying to locate two others within the building.

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First Call is designed to bridge this communications and safety gap by providing real time location information and communications capability based on ultrawideband UWB technology.

Integration with existing technology

In every SCBA that is donned by a fire fighter, the unit already has a PASS unit that monitors movement and bottle pressure. This can be enhanced without major alterations to existing equipment. This unit offers monitoring capabilities that can be sent back to a command screen that is constantly updated for use of the commanding officer. This information can also be uniquely serialized to the individual thus making this a proactive monitoring agent.